

SEQUENCE LISTING

<110> UCB, S.A.
 LYNCH, Berkley
 NOCKA, Karl
 FUKS, Bruno

<120> Methods for the identification of agents for the treatment of seizures, neurological diseases, endocrinopathies and hormonal diseases

<130> 53529-5007-01-US

<150> US 60/430,372
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<150> US 60/506,764
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<170> PatentIn version 3.1

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Thr	Ile	Phe	Tyr	Asn	Thr	Asp	Leu	Tyr	Glu	His	Lys	Phe	Ile	Asn	Cys	
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Asp	Leu	Glu	Gln	Asp	Asn	Asp	Phe	Leu	Ile	Tyr	Leu	Val	Ser	Phe	Leu	
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Ile	Gly	Trp	Gln	Cys	Leu	Phe	Cys	Gly	Thr	Ser	Ile	Ala	Ala	Trp	Asn	
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Gly	Asn	Thr	Ile	Phe	Ala	Ser	Phe	Val	Gly	Ile	Thr	Lys	Val	Val	Pro	
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 Lys Met Ala Pro Ser Arg Met Asp Ser Leu Arg Gly Gln Thr Asp Leu
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 Ser Lys Lys Gly Met Leu Gly Met Ile Val Tyr Leu Gly Met Met Ala
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 Gly Ala Phe Ile Leu Gly Gly Leu Ala Asp Lys Leu Gly Arg Lys Arg
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 Val Leu Ser Met Ser Leu Ala Val Asn Ala Ser Phe Ala Ser Leu Ser
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 Ser Phe Val Gln Gly Tyr Gly Ala Phe Leu Phe Cys Arg Leu Ile Ser
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 Gly Ile Gly Ile Gly Gly Ala Leu Pro Ile Val Phe Ala Tyr Phe Ser
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 Glu Phe Leu Ser Arg Glu Lys Arg Gly Glu His Leu Ser Trp Leu Gly
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 Ile Phe Trp Met Thr Gly Gly Leu Tyr Ala Ser Ala Met Ala Trp Ser
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 Ile Ile Pro His Tyr Gly Trp Gly Phe Ser Met Gly Thr Asn Tyr His

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 Gly Asn Thr Ile Phe Ala Ser Phe Val Gly Ile Thr Lys Val Val Pro
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 Asp Ile Ala Arg Glu Val Lys Lys Gln Thr Val Lys Lys Val Asn Gln
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 gct gtg gac cga gcc cag gat gaa tac acc cag agg tcc tac agt cgg 144
 Ala Val Asp Arg Ala Gln Asp Glu Tyr Thr Gln Arg Ser Tyr Ser Arg
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 ttc caa gat gaa gaa gat gat gat gac tac tac ccg gct gga gaa acc 192
 Phe Gln Asp Glu Glu Asp Asp Asp Asp Tyr Tyr Pro Ala Gly Glu Thr
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 Tyr Asn Gly Glu Ala Asn Asp Asp Glu Gly Ser Ser Glu Ala Thr Glu
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 Gly His Asp Glu Asp Asp Glu Ile Tyr Glu Gly Glu Tyr Gln Gly Ile
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 Pro Ser Met Asn Gln Ala Lys Asp Ser Ile Val Ser Val Gly Gln Pro
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 Lys Gly Asp Glu Tyr Lys Asp Arg Arg Glu Leu Glu Ser Glu Arg Arg

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Cys	Gly	His	Gly	Arg	Phe	Gln	Trp	Ala	Leu	Phe	Phe	Val	Leu	Gly	Met		
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Tyr	Gly	Phe	Phe	Leu	Phe	Cys	Arg	Leu	Leu	Ser	Gly	Phe	Gly	Ile	Gly		
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Cys Leu Tyr Asn Gly Leu Thr Ile Ser Ala Trp Asn Ser Leu Asp Val	
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Ser Thr Val Leu Val Cys Gly Gly Leu Val Gly Leu Cys Leu Pro Asp	
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 Ser Phe Phe His Asn Lys Thr Gly Cys Gln Ile Thr Phe Asp Asp Asp
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gag cat gaa gtc cag att gaa ggg gtc cac gtg ggc cta gag gct gtg      144
Glu His Glu Val Gln Ile Glu Gly Val His Val Gly Leu Glu Ala Val
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gag ctg gat gat ggg gca gct gtg ccc aag gag ttt gcc aat ccc act      192
Glu Leu Asp Asp Gly Ala Ala Val Pro Lys Glu Phe Ala Asn Pro Thr
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Lys Phe Gln Trp Lys Leu Ser Val Leu Thr Gly Leu Ala Trp Met Ala
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gat gcc atg gag atg atg atc ctc agc atc ctg gca cca cag ctg cat      336
Asp Ala Met Glu Met Met Ile Leu Ser Ile Leu Ala Pro Gln Leu His
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tgc gag tgg agg ctc cca agc tgg cag gtg gca ttg ctg acc tcg gtg      384
Cys Glu Trp Arg Leu Pro Ser Trp Gln Val Ala Leu Leu Thr Ser Val
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gtc ttt gta ggc atg atg tcc agc tcc acg ctc tgg gga aat atc tca      432
Val Phe Val Val Gly Met Met Ser Ser Ser Thr Leu Trp Gly Asn Ile Ser
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gac cag tac ggc agg aaa aca ggg ctg aag atc agc gtg ctg tgg act      480
Asp Gln Tyr Gly Arg Lys Thr Gly Leu Lys Ile Ser Val Leu Trp Thr
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ctg tac tat ggc atc ctt agt gca ttt gcg ccc gtg tat agc tgg atc      528
Leu Tyr Tyr Gly Ile Leu Ser Ala Phe Ala Pro Val Tyr Ser Trp Ile
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ctg gtg ctc cgg ggc ctg gtg ggc ttc ggg atc gga gga gtt ccc cag      576
Leu Val Leu Arg Gly Leu Val Gly Phe Gly Ile Gly Gly Val Pro Gln
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Cys Ile Leu Leu Ile Glu Val Phe Trp Ala Ile Gly Thr Val Phe Glu
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Trp Leu Pro Glu Ser Ala Arg Tyr Asp Val Leu Ser Gly Asn Gln Glu	
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Lys Ala Ile Ala Thr Leu Lys Arg Ile Ala Thr Glu Asn Gly Ala Pro	
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Met Pro Leu Gly Lys Leu Ile Ile Ser Arg Gln Glu Asp Arg Gly Lys	
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Ser Glu Glu Asp Tyr Met Asp Leu Leu Trp Thr Thr Leu Ser Glu Phe	
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Pro Gly Val Leu Val Thr Leu Trp Ile Ile Asp Arg Leu Gly Arg Lys	
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Lys Thr Met Ala Leu Cys Phe Val Ile Phe Ser Phe Cys Ser Leu Leu	
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Leu Phe Ile Cys Val Gly Arg Asn Val Leu Thr Leu Leu Leu Phe Ile	
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Ala Arg Ala Phe Ile Ser Gly Gly Phe Gln Ala Ala Tyr Val Tyr Thr	
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Pro Glu Val Tyr Pro Thr Ala Thr Arg Ala Leu Gly Leu Gly Thr Cys	
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Val Met Leu Glu Ser Ser Val Tyr Leu Thr Leu Ala Val Tyr Ser Gly	
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 Cys Ile Leu Leu Ile Glu Val Phe Trp Ala Ile Gly Thr Val Phe Glu
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 Pro Gly Val Leu Val Thr Leu Trp Ile Ile Asp Arg Leu Gly Arg Lys
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 Lys Thr Met Ala Leu Cys Phe Val Ile Phe Ser Phe Cys Ser Leu Leu
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 Ser Gly Met Ala Arg Val Gly Ala Leu Ile Thr Pro Phe Ile Ala Gln
 465 470 475 480
 Val Met Leu Glu Ser Ser Val Tyr Leu Thr Leu Ala Val Tyr Ser Gly

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 Asp Asp Asp Asp Phe Pro Ala Pro Ala Asp Gly Tyr Tyr Arg Gly Glu
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 ggg gcc cag gat gag gag gaa ggt ggc gct tcc agt gat gcc act gag 654
 Gly Ala Gln Asp Glu Glu Glu Gly Gly Ala Ser Ser Asp Ala Thr Glu
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 Phe Glu Glu Glu Glu Asp Asp Asp Asp Phe Pro Ala Pro Ala Asp Gly
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 Tyr Tyr Arg Gly Glu Gly Ala Gln Asp Glu Glu Glu Gly Gly Ala Ser
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 Ser Asp Ala Thr Glu Gly His Asp Glu Asp Asp Glu Ile Tyr Glu Gly
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 Glu Tyr Gln Gly Ile Pro Arg Ala Glu Ser Gly Gly Lys Gly Glu Arg
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 Met Ala Asp Gly Ala Pro Leu Ala Gly Val Arg Gly Gly Leu Ser Asp
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 Gly Glu Gly Pro Pro Gly Gly Arg Gly Glu Ala Gln Arg Arg Lys Asp
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 Arg Glu Glu Leu Ala Gln Gln Tyr Glu Thr Ile Leu Arg Glu Cys Gly
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His Gly Arg Phe Gln Trp Thr Leu Tyr Phe Val Leu Gly Leu Ala Leu
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 Met Ala Asp Gly Val Glu Val Phe Val Val Gly Phe Val Leu Pro Ser
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 Ala Glu Lys Asp Met Cys Leu Ser Asp Ser Asn Lys Gly Met Leu Gly
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 Leu Ala Asp Arg Leu Gly Arg Arg Gln Cys Leu Leu Ile Ser Leu Ser
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 Val Asn Ser Val Phe Ala Phe Phe Ser Ser Phe Val Gln Gly Tyr Gly
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 Thr Phe Leu Phe Cys Arg Leu Leu Ser Gly Val Gly Ile Gly Gly Ser
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 Arg Gly Glu His Leu Ser Trp Leu Cys Met Phe Trp Met Ile Gly Gly
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 Val Tyr Ala Ala Ala Met Ala Trp Ala Ile Ile Pro His Tyr Gly Trp
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 Ser Phe Gln Met Gly Ser Ala Tyr Gln Phe His Ser Trp Arg Val Phe
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 Lys Gly His Pro Glu Arg Val Phe Ser Val Thr His Ile Lys Thr Ile
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 His Gln Glu Asp Glu Leu Ile Glu Ile Gln Ser Asp Thr Gly Thr Trp
 405 410 415
 Tyr Gln Arg Trp Gly Val Arg Ala Leu Ser Leu Gly Gly Gln Val Trp
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 Gly Asn Phe Leu Ser Cys Phe Ser Pro Glu Tyr Arg Arg Ile Thr Leu
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Asp Gly Tyr Tyr Arg Gly Asn Glu Gln Asn Pro Glu Glu Asp Ala Gln	
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Ser Asp Val Thr Glu Gly His Asp Glu Glu Asp Glu Ile Tyr Glu Gly	
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Glu Tyr Gln Gly Ile Pro His Pro Asp Asp Val Lys Ser Lys Gln Thr	
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Lys Met Ala Pro Ser Arg Ala Asp Gly Leu Arg Gly Gln Ala Asp Leu	
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Met Ala Glu Arg Met Glu Asp Glu Glu Gln Leu Ala His Gln Tyr Glu	
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Thr Ile Ile Asp Glu Cys Gly His Gly Arg Phe Gln Trp Thr Leu Phe	
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Phe Val Leu Val Leu Ala Leu Met Ala Asp Gly Val Glu Val Phe Val	
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Val Ser Phe Ala Leu Pro Ser Ala Glu Lys Asp Met Cys Leu Ser Ser	
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Gly Ala Phe Ile Leu Gly Gly Leu Ala Asp Lys Leu Gly Arg Lys Lys	
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Glu Phe Leu Ser Arg Glu Lys Arg Gly Glu His Leu Ser Trp Leu Gly	
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Thr	Thr	Phe	Tyr	Asn	Thr	Asp	Leu	Tyr	Lys	His	Lys	Phe	Ile	Asp	Cys	
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Asp	Phe	Glu	Glu	Asp	Asn	Asp	Phe	Leu	Ile	Tyr	Leu	Val	Ser	Phe	Leu	
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Asp	Arg	Ile	Gly	Arg	Leu	Lys	Met	Ile	Gly	Gly	Ser	Met	Leu	Ile	Ser	
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Ile	Gly	Trp	Gln	Cys	Leu	Phe	Cys	Gly	Thr	Ser	Ile	Ala	Ala	Trp	Asn	
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gct	ctg	gat	gtg	atc	aca	gta	gag	ctg	tat	ccc	acc	aac	cag	agg	gcc	1872
Ala	Leu	Asp	Val	Ile	Thr	Val	Glu	Leu	Tyr	Pro	Thr	Asn	Gln	Arg	Ala	
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Thr	Ala	Phe	Gly	Ile	Leu	Asn	Gly	Leu	Cys	Lys	Leu	Gly	Ala	Ile	Leu	
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gga	aac	act	atc	ttt	gct	tct	ttt	gtt	ggg	atc	acc	aaa	gtg	gtc	ccc	1968
Gly	Asn	Thr	Ile	Phe	Ala	Ser	Phe	Val	Gly	Ile	Thr	Lys	Val	Val	Pro	
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 Val Ser Met Val Ala Leu Lys Phe Met Pro Glu Ser Pro Arg Phe Leu
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 305 310 315 320
 His Asp Thr Asn Met Arg Ala Lys Gly Thr Pro Glu Lys Val Phe Thr
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Val Ser His Ile Lys Thr Pro Lys Gln Met Asp Glu Phe Ile Glu Ile
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 Lys His Val Leu Phe Glu Asp Thr Phe Phe Asp Lys Cys Tyr Phe Glu
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 Arg Phe Ile Asn Ser Thr Phe Leu Glu Gln Lys Glu Gly Cys His Met
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Ala Gln Asp Glu Tyr Thr Gln Arg Ser Tyr Ser Arg Phe Gln Asp Glu		
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Asp Asp Asp Asp Asp Tyr Tyr Pro Pro Gly Glu Thr Tyr Ser Gly Glu		
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Glu Asp Glu Ile Tyr Glu Gly Glu Tyr Gln Gly Ile Pro Ser Thr Asn		
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Gln Gly Lys Asp Ser Ile Val Ser Val Gly Gln Pro Lys Gly Asp Glu		
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Tyr Lys Asp Arg Arg Glu Leu Glu Ser Glu Arg Arg Ala Asp Glu Glu		
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Glu Leu Ala Gln Gln Tyr Glu Leu Ile Ile Gln Glu Cys Gly His Gly		

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Asp	Gly	Val	Glu	Val	Phe	Val	Val	Gly	Phe	Val	Leu	Pro	Ser	Ala	Glu	
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Val	Tyr	Leu	Gly	Met	Met	Val	Gly	Ala	Phe	Phe	Trp	Gly	Gly	Leu	Ala	
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Gly	Phe	Phe	Ala	Phe	Leu	Ser	Ser	Phe	Val	Gln	Gly	Tyr	Gly	Phe	Phe	
	230					235					240					
ctc	ctc	tgt	cgt	ttg	ctt	tca	gga	ttc	ggg	att	gga	ggc	gcc	att	ccc	1003
Leu	Leu	Cys	Arg	Leu	Leu	Ser	Gly	Phe	Gly	Ile	Gly	Gly	Ala	Ile	Pro	
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Glu	His	Leu	Ser	Trp	Leu	Cys	Met	Phe	Trp	Met	Ile	Gly	Gly	Ile	Tyr	
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Val	Cys	Ala	Leu	Pro	Cys	Val	Ser	Ser	Val	Val	Ala	Leu	Thr	Phe	Met	
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Pro	Glu	Ser	Pro	Arg	Phe	Leu	Leu	Glu	Val	Gly	Lys	His	Asp	Glu	Ala	
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Trp	Met	Ile	Leu	Lys	Leu	Ile	His	Asp	Thr	Asn	Met	Arg	Ala	Arg	Gly	
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Gln	Pro	Glu	Lys	Val	Phe	Thr	Val	Asn	Lys	Ile	Lys	Thr	Pro	Lys	Gln	
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Phe Gly Thr Ser Glu Ser Met Met Ile Gly Met Leu Cys Leu Tyr Asn	
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Gly Leu Thr Ile Ser Ala Trp Asn Ser Leu Asp Val Val Thr Val Glu	
645 650 655 660	
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Leu Tyr Pro Thr Asp Arg Arg Ala Thr Gly Phe Gly Phe Leu Asn Ala	
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ctc tgt aaa gca gcg gcc gtc ctg gga aac tta ata ttc ggc tcc ttg	2299
Leu Cys Lys Ala Ala Ala Val Leu Gly Asn Leu Ile Phe Gly Ser Leu	
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Val Ser Ile Thr Lys Ala Ile Pro Ile Leu Leu Ala Ser Thr Val Leu	
695 700 705	
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Val Cys Gly Gly Leu Val Gly Leu Arg Leu Pro Asp Thr Arg Thr Gln	
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Val Leu Met	
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Phe Gln Asp Glu Asp Asp Asp Asp Tyr Tyr Pro Pro Gly Glu Thr	
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Tyr Ser Gly Glu Ala Asn Asp Asp Glu Gly Ser Ser Glu Ala Thr Glu	
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Gly His Asp Glu Glu Asp Glu Ile Tyr Glu Gly Glu Tyr Gln Gly Ile	
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Pro Ser Thr Asn Gln Gly Lys Asp Ser Ile Val Ser Val Gly Gln Pro	
100 105 110	

Lys Gly Asp Glu Tyr Lys Asp Arg Arg Glu Leu Glu Ser Glu Arg Arg
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 Ala Asp Glu Glu Glu Leu Ala Gln Gln Tyr Glu Leu Ile Ile Gln Glu
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 Cys Gly His Gly Arg Phe Gln Trp Ala Leu Phe Phe Val Leu Gly Met
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 Ala Leu Met Ala Asp Gly Val Glu Val Phe Val Val Gly Phe Val Leu
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 Pro Ser Ala Glu Thr Asp Leu Cys Ile Pro Asn Ser Gly Ser Gly Trp
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 Leu Gly Ser Ile Val Tyr Leu Gly Met Met Val Gly Ala Phe Phe Trp
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 Gly Gly Leu Ala Asp Lys Val Gly Arg Lys Gln Ser Leu Leu Ile Cys
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 Met Ser Val Asn Gly Phe Phe Ala Phe Leu Ser Ser Phe Val Gln Gly
 225 230 235 240
 Tyr Gly Phe Phe Leu Leu Cys Arg Leu Leu Ser Gly Phe Gly Ile Gly
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 Gly Ala Ile Pro Thr Val Phe Ser Tyr Phe Ala Glu Val Leu Ala Arg
 260 265 270
 Glu Lys Arg Gly Glu His Leu Ser Trp Leu Cys Met Phe Trp Met Ile
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 Gly Gly Ile Tyr Ala Ser Ala Met Ala Trp Ala Ile Ile Pro His Tyr
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 Gly Trp Ser Phe Ser Met Gly Ser Ala Tyr Gln Phe His Ser Trp Arg
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 His Asp Glu Ala Trp Met Ile Leu Lys Leu Ile His Asp Thr Asn Met
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 Arg Ala Arg Gly Gln Pro Glu Lys Val Phe Thr Val Asn Lys Ile Lys
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 Thr Pro Lys Gln Ile Asp Glu Leu Ile Glu Ile Glu Ser Asp Thr Gly
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 Thr Trp Tyr Arg Arg Cys Phe Val Arg Ile Arg Thr Glu Leu Tyr Gly
 405 410 415
 Ile Trp Leu Thr Phe Met Arg Cys Phe Asn Tyr Pro Val Arg Glu Asn
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Gly	Leu	Ser	Val	Trp	Phe	Pro	Asp	Val	Ile	Lys	His	Leu	Gln	Ser	Asp		
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Tyr	Asp	Asn	Gly	Arg	Phe	Leu	Gly	Val	Lys	Phe	Lys	Ser	Val	Thr	Phe		
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Lys	Asp	Ser	Val	Phe	Lys	Ser	Cys	Thr	Phe	Asp	Asp	Val	Thr	Ser	Val		
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Asn	Thr	Tyr	Phe	Lys	Asn	Cys	Thr	Phe	Ile	Asp	Thr	Leu	Phe	Glu	Asn		
	530					535					540						
Thr	Asp	Phe	Glu	Pro	Tyr	Lys	Phe	Ile	Asp	Ser	Glu	Phe	Gln	Asn	Cys		
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Ser	Phe	Leu	His	Asn	Lys	Thr	Gly	Cys	Gln	Ile	Thr	Phe	Asp	Asp	Asp		
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Tyr	Ser	Ala	Tyr	Trp	Ile	Tyr	Phe	Val	Asn	Phe	Leu	Gly	Thr	Leu	Ala		
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Val	Leu	Pro	Gly	Asn	Ile	Val	Ser	Ala	Leu	Leu	Met	Asp	Arg	Ile	Gly		
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Arg	Leu	Thr	Met	Leu	Gly	Gly	Ser	Met	Val	Leu	Ser	Gly	Ile	Ser	Cys		
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Phe	Phe	Leu	Trp	Phe	Gly	Thr	Ser	Glu	Ser	Met	Met	Ile	Gly	Met	Leu		
625					630					635					640		
Cys	Leu	Tyr	Asn	Gly	Leu	Thr	Ile	Ser	Ala	Trp	Asn	Ser	Leu	Asp	Val		
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Val	Thr	Val	Glu	Leu	Tyr	Pro	Thr	Asp	Arg	Arg	Ala	Thr	Gly	Phe	Gly		
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Phe	Leu	Asn	Ala	Leu	Cys	Lys	Ala	Ala	Ala	Val	Leu	Gly	Asn	Leu	Ile		
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Phe	Gly	Ser	Leu	Val	Ser	Ile	Thr	Lys	Ala	Ile	Pro	Ile	Leu	Leu	Ala		
	690					695					700						
Ser	Thr	Val	Leu	Val	Cys	Gly	Gly	Leu	Val	Gly	Leu	Arg	Leu	Pro	Asp		
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Thr	Arg	Thr	Gln	Val	Leu	Met											
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1				5					10					15		

cgc	cgc	aca	gga	gag	agc	gca	cgg	tca	gag	gac	gac	gcg	gct	tcc	ggg	96
Arg	Arg	Thr	Gly	Glu	Ser	Ala	Arg	Ser	Glu	Asp	Asp	Ala	Ala	Ser	Gly	
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gaa	cat	gat	gtt	cag	att	gag	ggg	gtc	cga	gtg	ggc	cta	gaa	gct	gtc	144
Glu	His	Asp	Val	Gln	Ile	Glu	Gly	Val	Arg	Val	Gly	Leu	Glu	Ala	Val	
		35					40					45				

gag	ctg	gat	gat	gga	gca	gct	gtc	ccc	aag	gag	ttt	gcc	aat	ccc	act	192
Glu	Leu	Asp	Asp	Gly	Ala	Ala	Val	Pro	Lys	Glu	Phe	Ala	Asn	Pro	Thr	
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gat	gac	act	ttc	atg	gtc	gaa	gat	gcg	gtg	gaa	gcc	att	ggg	ttc	gga	240
Asp	Asp	Thr	Phe	Met	Val	Glu	Asp	Ala	Val	Glu	Ala	Ile	Gly	Phe	Gly	
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aga	ttc	cag	tgg	aag	ctc	tct	gtt	ctc	acc	ggc	ttg	gct	tgg	atg	gcg	288
Arg	Phe	Gln	Trp	Lys	Leu	Ser	Val	Leu	Thr	Gly	Leu	Ala	Trp	Met	Ala	
				85					90					95		

gac	gcc	atg	gag	atg	atg	att	ctg	agc	atc	ctg	gcg	cct	cag	ctg	cac	336
Asp	Ala	Met	Glu	Met	Met	Ile	Leu	Ser	Ile	Leu	Ala	Pro	Gln	Leu	His	
			100					105						110		

tgc	gag	tgg	cga	ctc	ccc	agc	tgg	cag	gtg	gcg	ctg	ctg	act	tcg	gtg	384
Cys	Glu	Trp	Arg	Leu	Pro	Ser	Trp	Gln	Val	Ala	Leu	Leu	Thr	Ser	Val	
		115					120					125				

gtc	ttc	att	ggg	atg	atg	tcc	agt	tct	acg	ctc	tgg	gga	aac	atc	tcg	432
Val	Phe	Ile	Gly	Met	Met	Ser	Ser	Ser	Thr	Leu	Trp	Gly	Asn	Ile	Ser	
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ctg	tac	tac	ggc	atc	ctc	agc	gct	ttc	gcg	cca	gtg	tat	agc	tgg	atc	528
Leu	Tyr	Tyr	Gly	Ile	Leu	Ser	Ala	Phe	Ala	Pro	Val	Tyr	Ser	Trp	Ile	
				165					170					175		

ctg	gtg	ctc	cga	ggc	ctc	gtg	ggc	ttt	ggg	att	gga	ggg	gtg	cct	cag	576
Leu	Val	Leu	Arg	Gly	Leu	Val	Gly	Phe	Gly	Ile	Gly	Gly	Val	Pro	Gln	
			180					185						190		

tcg	gtg	acc	ctg	tac	gcc	gag	ttc	ctc	ccc	atg	aag	gcc	aga	gcc	aag	624
Ser	Val	Thr	Leu	Tyr	Ala	Glu	Phe	Leu	Pro	Met	Lys	Ala	Arg	Ala	Lys	
		195					200					205				

tgc	att	ttg	ctg	att	gag	gtt	ttc	tgg	gcc	atc	ggg	acc	gtg	ttc	gag	672
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Cys	Ile	Leu	Leu	Ile	Glu	Val	Phe	Trp	Ala	Ile	Gly	Thr	Val	Phe	Glu	
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Val	Leu	Leu	Ala	Val	Phe	Val	Met	Pro	Ser	Leu	Gly	Trp	Arg	Trp	Leu	
225					230					235					240	
ctg	ctg	ctg	tcg	gcc	gct	cca	cta	ctt	gtc	ttt	gct	gtt	ctg	tgt	ttc	768
Leu	Leu	Leu	Ser	Ala	Ala	Pro	Leu	Leu	Val	Phe	Ala	Val	Leu	Cys	Phe	
				245					250					255		
tgg	ctg	cca	gag	agt	gct	agg	tac	gat	gtg	ctg	tct	ggg	aac	cag	gaa	816
Trp	Leu	Pro	Glu	Ser	Ala	Arg	Tyr	Asp	Val	Leu	Ser	Gly	Asn	Gln	Glu	
			260					265					270			
aag	gcg	att	gct	acc	tta	aag	cgg	atc	gca	aca	gaa	aat	gga	gcc	ccc	864
Lys	Ala	Ile	Ala	Thr	Leu	Lys	Arg	Ile	Ala	Thr	Glu	Asn	Gly	Ala	Pro	
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atg	cct	ctg	ggg	aag	ctc	atc	atc	tcc	aga	cag	gaa	gac	cga	ggc	aaa	912
Met	Pro	Leu	Gly	Lys	Leu	Ile	Ile	Ser	Arg	Gln	Glu	Asp	Arg	Gly	Lys	
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atg	agg	gac	ctt	ttc	aca	ccc	cac	ttt	cgt	tgg	aca	act	ctg	ctg	ctg	960
Met	Arg	Asp	Leu	Phe	Thr	Pro	His	Phe	Arg	Trp	Thr	Thr	Leu	Leu	Leu	
305					310					315					320	
tgg	ttt	ata	tgg	ttc	tcc	aat	gcc	ttc	tct	tat	tac	ggc	ttg	gtt	ctg	1008
Trp	Phe	Ile	Trp	Phe	Ser	Asn	Ala	Phe	Ser	Tyr	Tyr	Gly	Leu	Val	Leu	
				325					330					335		
ctc	acc	aca	gaa	ctc	ttc	cag	gcc	gga	gat	gtt	tgc	agc	atc	tcc	agc	1056
Leu	Thr	Thr	Glu	Leu	Phe	Gln	Ala	Gly	Asp	Val	Cys	Ser	Ile	Ser	Ser	
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cgg	aag	aag	gcg	gtg	gaa	gcc	aaa	tgc	agc	ctg	gct	tgt	gag	tac	ctc	1104
Arg	Lys	Lys	Ala	Val	Glu	Ala	Lys	Cys	Ser	Leu	Ala	Cys	Glu	Tyr	Leu	
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agc	aaa	gag	gat	tac	atg	gac	ctg	ctg	tgg	acc	acc	ctg	tct	gag	ttc	1152
Ser	Lys	Glu	Asp	Tyr	Met	Asp	Leu	Leu	Trp	Thr	Thr	Leu	Ser	Glu	Phe	
		370				375						380				
cca	ggt	gtc	ctt	gtg	act	ctg	tgg	gtc	atc	gac	cgc	ctg	ggc	cgc	aag	1200
Pro	Gly	Val	Leu	Val	Thr	Leu	Trp	Val	Ile	Asp	Arg	Leu	Gly	Arg	Lys	
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aag	acc	atg	gct	ctg	tgt	ttc	gtc	atc	ttt	tcc	ctc	tgc	agc	ctc	ctg	1248
Lys	Thr	Met	Ala	Leu	Cys	Phe	Val	Ile	Phe	Ser	Leu	Cys	Ser	Leu	Leu	
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ctg	ttc	atc	tgc	att	gga	aga	aat	gtg	cta	acc	ctc	tta	ctg	ttc	att	1296
Leu	Phe	Ile	Cys	Ile	Gly	Arg	Asn	Val	Leu	Thr	Leu	Leu	Leu	Phe	Ile	
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gca	aga	gcg	ttt	att	tct	gga	ggc	ttc	caa	gca	gcc	tac	gtt	tac	acg	1344
Ala	Arg	Ala	Phe	Ile	Ser	Gly	Gly	Phe	Gln	Ala	Ala	Tyr	Val	Tyr	Thr	
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cct	gag	gtg	tat	cca	acg	gcg	acg	agg	gcg	ctg	ggc	ctg	ggc	acc	tgc	1392
Pro	Glu	Val	Tyr	Pro	Thr	Ala	Thr	Arg	Ala	Leu	Gly	Leu	Gly	Thr	Cys	

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Ser Gly Met Ala Arg Val Gly Ala Leu Ile Thr Pro Phe Ile Ala Gln			
465	470	475	480
gtg atg ctg gaa tct tcc gtg tac ctg acc ctg gcc gtc tac agt ggc			1488
Val Met Leu Glu Ser Ser Val Tyr Leu Thr Leu Ala Val Tyr Ser Gly			
	485	490	495
tgc tgc ctc ctt gct gcc ttg gcc tcc tgc ttt ctg ccc atc gag acc			1536
Cys Cys Leu Leu Ala Ala Leu Ala Ser Cys Phe Leu Pro Ile Glu Thr			
	500	505	510
aaa ggc cga gca ctg cag gag tcc agc cac cgg gag tgg ggc cag gag			1584
Lys Gly Arg Ala Leu Gln Glu Ser Ser His Arg Glu Trp Gly Gln Glu			
	515	520	525
atg gtt ggc cga ggg aca aac agc aca ggc gtc ccc agg tcg aac tct			1632
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Gly Ser Gln Glu			
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 Glu Leu Asp Asp Gly Ala Ala Val Pro Lys Glu Phe Ala Asn Pro Thr
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 Asp Asp Thr Phe Met Val Glu Asp Ala Val Glu Ala Ile Gly Phe Gly
 65 70 75 80
 Arg Phe Gln Trp Lys Leu Ser Val Leu Thr Gly Leu Ala Trp Met Ala
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 Asp Ala Met Glu Met Met Ile Leu Ser Ile Leu Ala Pro Gln Leu His
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 Cys Glu Trp Arg Leu Pro Ser Trp Gln Val Ala Leu Leu Thr Ser Val
 115 120 125
 Val Phe Ile Gly Met Met Ser Ser Ser Thr Leu Trp Gly Asn Ile Ser
 130 135 140
 Asp Gln Tyr Gly Arg Lys Thr Gly Leu Lys Ile Ser Val Phe Trp Thr

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Leu Tyr Tyr Gly Ile	165	Leu Ser Ala Phe	170	Ala Pro Val Tyr Ser Trp	175	Ile												
Leu Val Leu Arg Gly	180	Leu Val Gly Phe	185	Gly Ile Gly Gly Val	190	Pro Gln												
Ser Val Thr Leu Tyr	195	Ala Glu Phe Leu	200	Pro Met Lys Ala	205	Arg Ala Lys												
Cys Ile Leu Leu Ile	210	Glu Val Phe Trp	215	Ala Ile Gly Thr	220	Val Phe Glu												
Val Leu Leu Ala Val	225	Phe Val Met Pro	230	Ser Leu Gly Trp	235	Arg Trp Leu												
Leu Leu Leu Ser	245	Ala Ala Pro Leu	250	Leu Val Phe Ala	255	Val Leu Cys Phe												
Trp Leu Pro Glu Ser	260	Ala Arg Tyr Asp	265	Val Leu Ser Gly	270	Asn Gln Glu												
Lys Ala Ile Ala Thr	275	Leu Lys Arg Ile	280	Ala Thr Glu Asn	285	Gly Ala Pro												
Met Pro Leu Gly Lys	290	Leu Ile Ile Ser	295	Arg Gln Glu Asp	300	Arg Gly Lys												
Met Arg Asp Leu Phe	305	Thr Pro His Phe	310	Arg Trp Thr Thr	315	Leu Leu Leu												
Trp Phe Ile Trp Phe	325	Ser Asn Ala Phe	330	Ser Tyr Tyr Gly	335	Leu Val Leu												
Leu Thr Thr Glu Leu	340	Phe Gln Ala Gly	345	Asp Val Cys Ser	350	Ile Ser Ser												
Arg Lys Lys Ala Val	355	Glu Ala Lys Cys	360	Ser Leu Ala Cys	365	Glu Tyr Leu												
Ser Lys Glu Asp Tyr	370	Met Asp Leu Leu	375	Trp Thr Thr Leu	380	Ser Glu Phe												
Pro Gly Val Leu Val	385	Thr Leu Trp Val	390	Ile Asp Arg Leu	395	Gly Arg Lys												
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Ala Arg Ala Phe Ile	435	Ser Gly Gly Phe	440	Gln Ala Ala Tyr	445	Val Tyr Thr												
Pro Glu Val Tyr Pro	450	Thr Ala Thr Arg	455	Ala Leu Gly Leu	460	Gly Thr Cys												
Ser Gly Met Ala Arg	465	Val Gly Ala Leu	470	Ile Thr Pro Phe	475	Ile Ala Gln												

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Cys	Cys	Leu	Leu	Ala	Ala	Leu	Ala	Ser	Cys	Phe	Leu	Pro	Ile	Glu	Thr
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Met	Val	Gly	Arg	Gly	Thr	Asn	Ser	Thr	Gly	Val	Pro	Arg	Ser	Asn	Ser
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Gly	Ser	Gln	Glu												
545															